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Effectiveness of in-service training in stimulating teachers to increase their use of audio-visual instructional materials

Marie Judith Grabovitz

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THE EFFECTIVENESS OF IN-SERVICE TRAINING IN STIMULATING TEACHERS TO INCREASE THEIR USE OF AUDIO-VISUAL INSTRUCTIONAL MATERIALS

by

Sister Marie Judith Grabovitz, O.P.

A RESEARCH PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION (EDUCATION OF MENTALLY HANDICAPPED)
AT THE CARDINAL STRITCH COLLEGE
Milwaukee, Wisconsin
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This research paper has been approved for the Graduate Committee of the Cardinal Stritch College by

[Signature]
(Adviser)

Date May 30, 1972
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The writer wishes to express her sincere appreciation to her community, the Sinsinawa Dominicans, for granting her a year off to pursue further studies in the field of mental retardation.

Her greatest spirit of thank you is to the children of St. Coletta's who have shown her the beauty of love and joy.

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CHAPTER I
THE PROBLEM

Introduction

The intent of this paper is to explore the importance of in-service education for the Special Education Teacher. The key to a better instructional program lies in improving the effectiveness of the teaching staff; what they do, or fail to do, and how effective they are makes the difference between poor education and good education. As has been said since schools first appeared, the effectiveness of the teacher is a prime element of instruction. In-service education is one means of increasing the effectiveness.

It was since the military services found audio and visual aids so instructional in speeding the training of recruits during the last war that there has been an upward surge to a greater use of audio-visual media. The rapidity of the growth is the cause of a problem today for teachers and administrators. The question that needs to be answered is: What manner of approach shall best bring the
stimulation of audio-visual (A-V) materials to a satisfactory level of practice? Is an in-service program an answer to this problem?

It is the responsibility of every school to have a good program of in-service education. The audio-visual director must be concerned with basic principles and be guided by them in organizing and planning the structure of an in-service program.

The goal of audio-visual directors is to have a well organized and functioning in-service program. He uses the "tools of his trade" in his program showing how media can be used in the teaching-learning situation. With the expanding body of knowledge that students are faced with learning, and the short time they have them in class, the teacher, too, must use every means at his command in his teaching including the technology. There are many new devices at his disposal; such as educational television, tape recordings, overhead projectors and programmed instruction. These devices, in some cases, are new to the teacher since the teacher's training was completed prior to their development. Studies show that many of our present teaching staff have little preparation in the use of these modern educational media. For this reason, the principal and audio-visual director must be aware of the need for in-service education.
Brown, realizing the importance of having good teachers on a faculty states, 

Good utilization of educational media is primarily a matter of human understanding, skill, and motivation. It requires well-trained, competent teachers who know media and materials and how to arrange the conditions of their use for optimum results. Of course highly qualified teachers will not suffice.¹

This paper will attempt to present a model for establishment of an in-service program and an evaluation of its effectiveness in stimulating a faculty to utilize various types of materials, to grow professionally and to select materials appropriate to various curricular areas.

The Statement of the Problem

The issue of this study was to initiate an in-service program for innovating the instructional behavior of teachers. Its purpose was to determine if there was a significant increase in the use of A-V materials after in-service programs. It further investigated whether the level of questions according to the Bloom Sanders Taxonomy of Questions was raised during the time that A-V materials were used.

The teaching profession is presently in need of audio-visual in-service programming. Due to the field being

non-static, its materials and objectives are constantly developing and future will be more or less dependent upon teacher training at that time for its level of teaching efficiency in the A-V area.

The primary purpose of this study was to explore and measure the audio-visual climate of a group of teachers of an individual school. Several teachers were examined to determine if they had any significant relationships to a school's audio-visual climate. The basic questions with which that study was concerned were:

1. What type of media program was in evidence in this particular school?

2. To what extent will in-service training stimulate teachers to use A-V material more effectively?

3. Does the use of A-V materials raise the level of questions posed by the teacher to the student?

The investigator felt that the use of the A-V materials would reinforce much knowledge and would therefore make the student more aware of the subject area and would in turn encourage them to ask more and possibly a higher level of questions.

Since learning is the process of acquiring new behaviors the investigator also hoped that through learning with A-V materials both the teacher and student behaviors would be enriched by their interchange of questions.
The investigator used Bloom Sanders Taxonomy of Questions to evaluate the level of questions involved in the six classrooms.

The Modified Bloom-Sanders Taxonomy of Questions:

1. PROCEDURES: Question relates to routine of class, school, assignments, etc.

2. RHETORICAL: Question is asked by the teacher, but no response is anticipated or accepted, or the teacher answers the question.

3. MEMORY: The student recalls or recognizes information.

4. TRANSLATION: The student changes information into a different symbolic form or language.

5. INTERPRETATION: The student discovers relationships among facts, generalizations, definitions, values and skills.

6. APPLICATION: The student solves a lifelike problem that requires the identification of the new issue and the selection and use of appropriate generalizations and skills.

7. ANALYSIS: The student solves a problem in the light of conscious knowledge of the parts and forms of thinking.

8. SYNTHESIS: The student solves a problem that requires original creative thinking.

9. EVALUATION: The student makes a judgment of good or bad, right or wrong, according to standards he designates.

---

There are several reasons why teachers should have in-service opportunities for continuing professional growth. Although teachers have undergone a period of pre-service education before formally entering upon their duties, this training can vary considerably in amount and quality; further, some teachers have studied recently and others had their courses years ago. Techniques and materials shift and new materials are introduced. Even the objectives of education shift, new values and emphasis are given recognition. Therefore, it is up to every administrator to make available in-service programs to keep his faculty abreast of sociological and professional changes.

These new developments also make new demands upon administration and programming. Principals and supervisors are confronted with the need for new competencies and new responsibilities. In fact, these new teaching devices require a radically new approach to the whole problem of education.

Audio-visual materials alone cannot do the job; to be effective, they must be used by creative teachers who have specific educational objectives and in a classroom environment which is conducive to learning and teaching.

The use of audio-visual materials in teaching offers rewards to the good teacher who realizes that her rewards come as a result of the successful learning experiences of her students.
Education and training of teachers is a process, not an event. Teacher education is the most appropriate method of utilizing various types of audio-visual materials and is imperative to the improvement of the quality of teaching. The training of teachers in the operation of equipment gives them insight into the advantages and limitations of each specific type. In-service education and training pays big dividends in keeping the faculty alert to new and more effective methods and techniques.

Therefore, the problem under study is: Will a carefully planned and illustrative in-service program stimulate the professional growth of the individual and also motivate him/her to use A-V materials effectively and will this in turn develop a higher level of questions and answers between teacher/pupil?

Limitations of the Study

The present study is limited to a thirty day observation period and three two-hour in-service programs. In addition to the above limitations there were other noticeable limitations such as: (1) the observation was limited to the tape recorder, overhead projector and chalkboard; (2) limited space for the use of the A-V equipment in the various classrooms; (3) the investigator was a student and not one of authority; (4) the study was maintained in classrooms where the mental age ranged from 3-3 to 8-9 and intelligence quotient from 35-84; (5) the study
was held in a small residential school; and (6) it was limited to six teachers.

Although there were several limitations the investigator felt the study could be of value to an audiovisual director or administrator who is investigating various methods to stimulate teachers to change their teaching behavior.

Definition of Terms

AUDIO MATERIALS - Instructional materials that use listening as the primary process of communication. In this category are phonograph records, recorded tapes, sound tracks from other produced sounds.

AUDIO-VISUAL - A generic term referring to experiences, equipment, and materials used for communication in instruction. It implies techniques based upon practices utilized in education and training.

AUDIO-VISUAL MEDIA, RESOURCES - Terms used "interchangeably" to designate a wide range of materials and devices utilized in an instructional situation, and considered less symbolic than printed words.
CHALK TALK - A presentation in which the primary communication medium is a chalkboard drawing which is usually accompanied by lecture or discussion.

DEMONSTRATION - A presentation characterized by showing how to make or do something operate or perform. Includes the use of materials, equipment, or real things.

IN-SERVICE EDUCATION - Those experiences, processes, and procedures which result in personal, academic, and professional growth of the individual. The attainment of these characteristics contribute to the enhancement of the quality and effectiveness of the educational program in schools.

OVERHEAD PROJECTOR - An electrical device which throws a highly illuminated image on a projection surface by reflection from a mirror, it is placed in front of the viewers and may be used in a semi-darkened or completely lighted room.

RECORDER (TAPE) - A device for recording sound or magnetic fields on a tape coated with iron oxide.
Hypotheses

Based upon the questions and observations to be considered, the following hypotheses were tested:

1. An instructional in-service program will cause a significant increase in the use of audio-visual equipment and materials.

2. A logically guided in-service program will create a significant increase in the percentage of the indirectness/directedness of the teacher's verbal behavior.

3. The thought level of the teacher's oral questions as identified by a modified Bloom Sanders Taxonomy of Questions will be raised above memory/memory questions.
CHAPTER II

REVIEW OF RELATED LITERATURE

There is a growing mass of evidence indicating substantial increases in the amount and length of retention experienced by pupils as a result of a multimedia approach to instruction. It is of such magnitude that educators can no longer ignore it. In a profession notorious for its conservatism in adopting new methods, verbal acceptance of audio-visual aids and materials has been relatively swift. However, realization of their effective use has not always been as prompt as has been desired.

Purpose of In-Service Education

Drew and Madore state that the most important reason for in-service sessions is that it keeps the teachers abreast of the rapidly expanding new knowledge and professional subject matter. They also state:

More than a decade ago, Hass stated three major reasons for developing and maintaining in-service education programs. The first he identified improvement of the total school staff. The second he gave as the need to assist new teachers and those who are entering new responsibility. The third reason he qualified through recognizing that improved educational programming would, 3 in time, lessen the educational deficiencies of teachers.

Historical Perspective

Historically a major thrust of in-service education was directed towards the completion of college programs. The traditional college course for credit approach, as the major thrust of in-service education, continues to represent today far too great a portion of educators' efforts. In-service education must not be confused with the measured preparation goals usually identified by degrees, certificates, and special skill demands of specific responsibility.

In-service education requires an infinite variety of services designed to meet the performance expectations of teacher education. Brown poses the challenge to in-service education when he describes the type of teacher needed. He "calls for teachers to be different kinds of human beings, for new attitudes more than new skills, for new assumptions more than for new knowledge. . . . Teachers who are able to do a good deal more than take refuge in telling students something and able at the same time to do a good deal more than merely providing 'comfortable' classrooms."4

The excuse used in the past was that teachers lacked sufficient equipment and materials to provide adequate programs. Recent developments have rendered this excuse

unacceptable. Since 1958, the National Defense Education Act (P.L. 85-864) has provided matching funds for the purchase of audio-visual aids, and the Elementary and Secondary Education Act (ESEA) of 1965 (P.L. 89-10) now provides a source of total funding for these items.

Much of this equipment will get little use unless consistent efforts are carried out to make the teachers aware of its advantages and to train them in its utilization.

Professional Leadership

As instructional leader of the school, the principal is primarily responsible for the leadership and motivating force to have in-service programs and to use audio-visual materials. In some systems this will mean that he/she merely coordinate the efforts of his/her teachers and those trained personnel within the systems (audio-visual directors or librarians).

Administrators and supervisors are continuously seeking ideas for interesting and effective in-service programs. That they often fail is evidenced by the frequent complaints of teachers about in-service training could be more effective, or show more immediate results, than in instructing teachers in the use of audio-visual aids and materials.
Necessity and Effectiveness of In-Service Training

Most in-service education programs are designed to improve the quality of instruction within a school system. It is necessary for teachers to continue professional growth so that quality instruction can be maintained. All teachers, experienced as well as inexperienced, should profit from a well-organized plan of in-service education. Although most teachers have had some audio-visual training, the changes in the field make their instruction obsolete within five to ten years.

There are many reasons why in-service education can be beneficial to a school system. One of the most important reasons is that it provides teachers an opportunity to learn about new methods and materials for the use in the classroom. It also enables teachers to exchange ideas and to share information about favorable practices in education.

Flanders suggests that the main purpose of an in-service program is to bring about "desirable changes in behavior in teachers". He suggests that the ideas about the teaching/learning process must be organized into meaningful concepts in terms of overt behavior, must be useful so that they may be applied personally and related to the teacher's own situation, must give insight to teaching of personal inquiry, must give teachers an opportunity to practice techniques taught, must emphasize the
resources available to the teachers, and must provide ample time for critical evaluation of the in-service program.5

Cultural, social and technological changes have influenced the curriculum of American normal and special schools. Educators today must be better informed than ever before in the history of education. In-service education can assist educators in meeting current educational demands. Gruver states:

Teachers' in-service must be encouraged and guided in extending the scope of their educational background and interests. Teachers must accept the new responsibility that modern society is placing upon them and must qualify to meet these conditions.6

In many instances the in-service training of teachers in the effective use of media in the classroom has not resulted in the improvement of instruction because of traditional training and beliefs, lack of facilities, and lack of equipment.

These obstacles include a list of personal and organizational resistance factors that are difficult to overcome:

1. FEAR OF THE NEW OR THE UNKNOWN—Both teacher and aspirant teachers often feel uncomfortable and insecure with


new materials and techniques that vary markedly from the way they have been taught.

2. FEAR OF THE MECHANICAL--Both the aspirant teacher and teacher (especially women who have the feeling that they are not mechanically oriented) believe that they will never learn how to use media equipment and supplies.

3. LACK OF FINANCIAL RESOURCES--The cost of equipment, supplies and additional specialists on teaching staffs has slowed the growth of media programs.

A well planned in-service program can help to eradicate the fear of the unknown and mechanical query. It is also during these sessions that the quandary of how to supply financial aid can be explored.

The investigator feels that a well planned in-service can develop professional growth of teachers if the following suggestions are considered: (1) self-motivating--it is essential that the teachers be involved in the planning of their in-service work so that they can perceive potential and actual outcomes in self-growth; (2) individualized--sessions should be designed to meet the individual needs of the teachers in the school; (3) flexible--if sessions are to be self-motivated and individualized the teachers must be allowed to break the rigidity and inflexible procedures occasionally; (4) finally, through in-service the teacher must reach self-fulfillment professionally.
In-service training, then should be regarded as a professional activity which should become an individual obligation to accept, encouraged by good supervision in a continuous program of professional improvement. In-service training is not something static which is presented repetitiously several times during a school year. In-service training is a continuous dynamic process, flexing, changing and adapting to best serve teachers and the entire educational system.

One obvious objective is to develop through in-service programs, a climate conducive to change—alleviate teacher impatience with the status quo, and promote a willingness to alter traditional methods of instruction. A logical start in planning the in-service program would be to examine some of the reasons educators resist and reject new approaches to audio-visual instruction so teachers can formulate strategies to combat and overcome this resistance. The complexity of an innovation particularly involving technology, has a strong influence on acceptance, resistance or rejection.

Principals must provide the opportunity for interested teachers to participate in the evaluation and selection of equipment, materials and policies related to their use. Clear-cut channels of communication must be established to provide for feed-back, positive and negative,
and to avoid misunderstandings about the objectives of the innovation, and the potential changes required with its implementation. In-service programs using consultants and other personnel provide us with advice and suggestions so that we are in a better position to handle the inevitable problems associated with innovations in an on-going system.

**Teacher Characteristics**

Teachers and students are individuals with individual skills, abilities and potentials. Media tools can allow all to teach and learn according to those abilities. Media can bring the real world into their teaching and learning experiences.

In reference to teachers, Barr states:

To select, recruit, educate, and assign teachers to particular teaching positions in an acceptable manner, one must have more precise information about the many meanings associated with teaching, in general and in particular situations; and how to identify the personal, academic and professional prerequisites to effectiveness.7

In commenting on a few essentials of a good teacher, Kinder states that a good teacher knows that he must challenge his students, that he/she must help them find answers to their problems, and that he/she must somehow arrange it so that they acquire certain skills.

---

A conscientious teacher will make good utilization of educational media but in order to do this he/she must have good human understanding, skill, and motivation. It requires well trained competent teachers who know media and materials and how to arrange the conditions of their use for optimum results. Of course highly qualified teachers alone will not suffice.

Teachers need to understand and to touch, to use and to improvise with media tools if they are to realize their potential and the best means of doing this is to involve them in an in-service program which investigates their use and value.

Without doubt, most teachers are eager to become increasingly well prepared to teach at the highest possible level of effectiveness, and most of them go to some pains to do this. They select appropriate methods on the basis of curriculum materials and in accordance with the age group being taught. He/she also varies his/her methods from session to session to prevent boredom.

A teacher primarily needs to be trained in the various techniques and equipment but no matter how well trained or how experienced and skilled teachers may be, they obviously cannot make use of the media unless the instruments of instruction are available and usable.
A good teacher is one who welcomes exploration and experimentation and recognizes that these can be investigated at an in-service program.

Learning Characteristics of Retarded Children

The characteristics of the retarded are unique insofar as there is a vast unevenness in their mental abilities. Most noticeable is their intellectual subnormality. Often their physical defects with their intellectual defect creates a greater difficulty in their learning.

The retarded child on many occasions is very distractable, therefore, the teacher must find many avenues of learning for these children.

As a group, the mentally retarded may display evident characteristics, but few within the group will have all of the characteristics. In Erickson's discussion of the characteristics of the mentally retarded he states that in addition to their learning problems, some retarded children generally have such weaknesses as physical and health problems, poor language development, poor motivation due to apathy or lack of understanding, behavior problems due to social maladjustment or lack of security, poor self-concept and as can be expected, limited experiences. 8

Goldstein in evaluating the educability of the mentally retarded reiterated Erickson's ideas when he states:

Among the most important facts to remember about the characteristics of the EMR are: 1. they are shared with both normal and gifted peers, 2. few children will exhibit all of the characteristics to be discussed, many of the characteristics are subject to positive change if the right combination of understanding and treatment is employed.⁹

Usually the first indication of the presence of retardation is the child's learning problem. This is not, on occasion, determined until a child is about in third grade because his difficulties during early years at home and first years of school are frequently attributed to immaturity.

An essential factor in learning is "motivation" according to Gates and Jersild.¹⁰ Because of the various intellectual, psychological and physical deficiencies of the retarded child the special education teacher must be very adept at motivating her/his students in many ways. A motivated child will venture into exploring activities and as they explore, their curiosity grows causing them to reach out to numerous aspects resulting in education.


It is obvious that some activities, equipment and materials have more educational significance than others which may be due to their ability to motivate students. It is then the obligation of the teacher to guide and direct learning activities and to evaluate the value of these in retrospect of the retarded child. J. S. Kinder has stated that audio-visual materials provoke motivation; therefore, they cannot be over-looked in any scheme of modern education.\textsuperscript{11}

The curriculum must be sensitive to the behavioral deficiencies peculiar to the mentally retarded, therefore, the instruction should be taught primarily through a medium of exercise with things that can be handled, seen, touched or heard rather than through a medium of words, the verbal and the abstract. From these statements it is obvious that the mentally retarded child will learn more readily from audio-visual and sensory materials than he will from lectures or explanations.

When the teacher is investigating the materials she/he feels will bring new experiences to children, she should have in mind some of the basic values and aims in using the audio-visual materials. She/he should also consider what is the best audio-visual aid to help these

particular special education children. The group must be ready both maturity-wise and ability-wise for the experience to be of value. The materials, though simple, should recognize the dominant interest pertaining to the topic being studied.

In reference to the type of program to be considered in a school situation, Goldstein states:

The implications indicate that in any educational program for the mentally retarded serious consideration should be given to the type of methods and materials. The author contends that a greater portion of the program must be dealt with through direct experiencing and where this is not feasible, via vicarious experiences such as audio-visual aids elaborated in this section and which the evidence presented strongly supports from a theoretical viewpoint.\(^{12}\)

Recognizing that mentally retarded children have difficulty with abstract symbols and retain and learn more facts from viewing, it is well for teachers to study Olsen's Pyramid which slows the level of types of learning (page 24).\(^{13}\)

The special education teacher must use every available aid to train the eyes and ears, which must do extra duty for the mentally retarded.

\(^{12}\)Goldstein, op. cit., p. 21.

Olsen's Pyramid

Vicarious Learning
Through Words
(abstract symbols of reality
Speech--Writing--Formulas)

Vicarious Learning
Through Audio-Visual
Materials (Mechanical Representations of Reality) Maps, Charts, Graphs,
Objects, Specimens, Pictures, Models, Slides,
Filmstrips, Motion Pictures.

Direct Learning
Through First Hand Experiences, Resource
Visitors, Interviews, Field Trips, Surveys,
Extended Field Trips, Camping, Service-Work Experiences.

Overhead Projector

The overhead projector is one of the most versatile of classroom teaching tools. It was developed during World War II. Its use in schools was quite limited until the late 1950's because of the relatively high cost of projects, limited and expensive methods of producing transparencies.
Since the early 1960's, however, the development of relatively inexpensive projectors and new techniques of preparing transparencies has broadened the potential for this teaching device. And in the past few years many teachers have described the advantages of instruction by the use of the overhead projection:

1. The teacher faces the class.
2. Bright images are projected in fully lighted rooms.
3. The instructor may write or draw extemporaneously on the horizontal stage of the projector, for simultaneous projection. He can project transparent objects, animated devices, or objects in fluids.
4. Transparencies composed of several layers of films may be used to illustrate step-by-step phenomena by unmasking the layers for progressive disclosure or by building them to form composite images.
5. The overhead projector is simple and easy to use.
6. Transparencies are readily "teacher-made" or can be obtained commercially.

The most valuable contribution of the overhead projector to classroom instruction derives from the unique quality of the overhead which enables the teacher to overlay information in order to show relationships and make comparisons. This technique can be utilized in every school subject to a greater or lesser degree.

At present most of the transparencies prepared for use with the overhead, whether commercial or teacher-made,
are designed for the purpose of giving information. However, as the emphasis on the development of concepts, generalizations, and skills of analysis and inquiry increases, and teachers give more and more attention to planning conceptual and inductive lessons, the comparative feature of the overhead will be utilized to a greater extent.

Barr in his study compares the overhead projector with the chalkboard instruction states:

Using the overhead projector in place of the usual chalkboard presentation produced a higher quality of learning. 14

Many studies show that overhead projection is an effective teaching device. In lieu of this, it is the duty of educators to evaluate the value of this teaching aid in his/her school and classroom.

**Tape Recorder**

The tape recorder opens up exciting possibilities in the teaching of the slow learning child.

There are many ways of putting the tape recorder to work and different techniques to make it more efficient. One technique is to have an introduction to a topic taped as an explanation. Another technique is to record project activities of students.

---

Almost any elementary or special classroom can have a Speaking-Listening Center. The necessary equipment is a tape recorder, a set of earphones, a small table, chairs. A special booth or separate room is convenient but not essential. Actually the Center can operate in one corner of almost any classroom.

The teacher will need to instruct the children in the use of the recorder and to set standards for behavior in supervised listening and recording activities. Even small children will accept responsibility for self-direction at the Center and will use it without disrupting the work or instruction going on in the classroom.

One of the most valuable ways of exploiting a tape recorder is to encourage the children to make their own recordings. This opens up a wide field of activity and proves to be one of the most effective ways of stimulating the use of language by children not only in the use of recording but also in listening to their own voice and evaluating it.

Although the tape recorder is of great value, educators must realize that it is not a substitute for a teacher. It should be used only when it enables the teacher in the classroom to do something better than he/she could do it without the tape recorder.
Chalkboard

The success of the chalkboard technique for all types of children lies in the balancing of the auditory, kinesthetic and visual senses.

For the child who experiences difficulty in executing the chalkboard experiences, it has been suggested that the child use a template, or pattern, with the cut-out section in the center. This procedure enables the child to trace around the inside of the pattern, until he can feel the movement of the figure before he tries to use the chalk.

In all of the chalkboard exercises, Kephart emphasizes these considerations: a) figures should always be made in different sizes and positions so that the child will realize that it is the shape, not the size or position, that characterizes the figure; b) activities should be introduced in order of difficulty; c) practice should be discontinued as soon as possible. 15

Techniques to help make the chalkboard more effective: 1) Put amounts of written work on the chalkboard before class session begins; 2) Let pupils participate in writing or drawing; 3) Write class contributions on the board and let this be a lead to group activities and discussion; 4) Use simple drawings such as stick figures to illustrate; 5) Make use of the suspense method.

15 N. C. Kephart, The Slow Learner in the Classroom (Columbus, Ohio: Charles E. Merrill Book Co., 1960).
Summary

The purpose of in-service programs is to aid teachers to keep abreast of expanding new knowledge in the area of education. Most in-service programs are designed to aid both experienced and inexperienced in areas of importance and interest and are, therefore, considered to be significantly important and valuable.

In-service programs can stimulate and encourage teachers to better use their skills and abilities and can also help develop the creative ideas of the teachers in the use of audio-visual materials.

A conscientious teacher realizes that there is a continual influx of new ideas, skills, and attitudes in the educational area and to be a better teacher he/she must investigate the educational media in order to better evaluate the various techniques and equipment.

The mentally retarded child finds learning difficult, therefore, the creative teacher will attempt to teach these children in as many ways as possible. The more things are repeated the better they will learn and the more they are motivated into exploring different activities, such as audio-visual aids, the better the results will be.

The overhead, tape recorder and chalkboard are all valuable devices to be used in the classroom but their definite value depends upon the way in which they are used in a classroom.
CHAPTER III

PROCEDURE

In an effort to measure the effectiveness of in-service training in stimulating teachers to increase their use of audio-visual instructional materials, the investigator focused her efforts on six teachers from St. Coletta School, a residential school for mentally handicapped children in Jefferson, Wisconsin. The teachers chosen were teachers who were willing and able to attend the three in-service training sessions.

The class enrollments consisted of classes ranging in number from 10-15; chronological ages from 7-2 to 15-9; mental ages from 3-3 to 8-9; and intelligence quotients from 35-84.

At ten-minute intervals the extent of the exclusive use of either the tape recorder, overhead projector or chalkboard were recorded, as well as the level of questions according to Bloom Sanders Taxonomy of Questions. It was also at this time that the specific dates of observations were determined and given to the prospective teachers. Teachers were unaware of the purpose of the observation.
The observation days were scheduled on three consecutive cycles of six days. During these days the observer tabulated the minutes that the teacher/student used the audio-visual equipment and tallied the number of questions and answers. The investigator also noted during this time whether the use of the audio-visual materials were used in an instructional or auto-instructional manner.

Since this study was designed to explore the effectiveness of in-service training, it was necessary to focus main attention on the in-service sessions; therefore, after the basic plans of the research were developed the investigator contacted numerous companies and agencies for expert advice as to the various and most efficacious uses of the tape recorder, overhead projector and chalkboard. They not only gave creative ideas concerning techniques, methods and processes but also loaned transparencies, tapes and cassettes to be utilized at the in-service sessions.

On Tuesday, October 12, the first of the in-service sessions began with the discussion of the advantages and disadvantages of the use of the overhead projector. This meeting consisted of explanation of (1) how to use the overhead projector, (2) how to make original transparencies, either through the use of the thermofax or by using black pencil or ink, or by merely reproducing an original picture to a transparency, (3) explained the
types of pens, pencils usable for the overhead, and (4)
from what source can commercial transparencies be supplied.

To heighten the teachers' interest, the investiga-
tor prepared, showed and explained samples of transparencies
made with pencil, overhead projector pens, made over-lays,
showed how to make a thermofax copy, used colored and
clear acetate and procedure concerning the lifting of
pictures from magazines.

The session culminated after the investigator and
faculty cited ways the overhead projector would be
valuable for academic subjects.

On the following Tuesday, the second of the in-serv-
ice sessions was held. This meeting's main purpose was to
analyze the major functions and techniques of the tape
recorder. The teachers were previously told what the
meeting was going to consist of, therefore, were prepared
to be more involved in the content of the subject.

The basic ideas emphasized at this meeting were the
numerous ways that the tape recorder aids an individual.
The ideas discussed by the investigator were (1) how to
individualize instruction, (2) how it helps save time,
(3) how it keeps lessons personal, and (4) how it helps
broaden lesson content. It was also considered important
to discuss ways that the tape recorder assisted the student.
Pertinent ideas such as (1) giving opportunities for the
student to work at his/her pace, (2) helping them to
receive individual attention and (3) helps them to
concentrate better were discussed. During this session, the investigator also gave guidance on tape recording.

As in the other session the investigator and faculty shared their experiences concerning the uses of the tape recorder. Consequently, each one present became aware of a host of ideas in the areas of math, reading and spelling.

The last in-service session was held the following Tuesday, the prominent topic being that of the most effective and valuable procedures in the use of the chalkboard. The investigator in planning the program gave a short resume of the various techniques of using the chalkboard and how to obtain the best results. Some ideas given were: (1) lettering should be large; (2) all information which is not being used should be erased; (3) let pupils participate; (4) use simple drawings; and (5) hidden drawing methods.

This was followed by an open discussion of those present and all contributed creative ideas and techniques. Each teacher reinforced her ideas by illustrating and evaluating them.

Since the object of the study was to evaluate the value of the in-service program the investigator re-observed the same classrooms and repeated the tabulation as was initially done.
From this approach a comparison could be made between the two observation periods to determine if, after the in-service sessions, there was any significant change in the teachers' use of audio-visual material.

Endeavoring to better understand the possible reasons why the teachers did or did not use the A-V materials, a questionnaire was also given to these teachers. This questionnaire (Appendix E) was composed of questions referring to their years of teaching, their audio-visual experience and their personal reactions toward A-V materials and the in-service program itself.

Summary

The investigator in attempting to stimulate teachers to use the audio-visual materials, tried to evaluate how effective an in-service program would be to attain this end.

Six teachers were selected to participate in this investigation. The investigator observed these six class rooms for three weeks at which time the minutes that A-V materials were used and the level of questioning were tabulated.

At the end of these three observation weeks, three in-service programs were held at which time the values, problems and uses of the tape recorder, overhead projector and chalkboard were discussed.
To analyze if in-service programs stimulate teachers to use A-V materials more the investigator again observed the classrooms for three weeks after the in-service programs. At this time the minutes that A-V materials were used and the level of questioning were again tabulated.
CHAPTER IV
DATA OF RESEARCH

In this chapter the writer will present the data obtained during the pre and post in-service observation periods. It was the purpose of the study to determine whether or not a significant increase in the utilization of audio-visual materials would take place following in-service sessions.

This chapter will serve to present the results of the time the selected classrooms spent in using audio-visual aids and also the type of audio-visual aid that was used.

To provide a situation in which the writer could measure the effect of in-service programs on teacher/student participation, Bloom Sanders Taxonomy of Questions was used to see if there was difference in the kind of use. The tallying was done to determine the change in the amount of use.

Figure I illustrates the minutes that the individual teacher used the chalkboard during the 960 minutes of observation.

Three of the six teachers increased the time spent using the chalkboard for auto instruction and the times that were increased were not significant, two teachers
Figure 1.—Minutes of Chalkboard Use

Pre in-service auto instruction
Post in-service auto instruction
Pre in-service teacher instruction
Post in-service teacher instruction
decreased and one never did use it at all. Changes in amount of use were sufficiently slight to suggest that they were artifacts of the type of work being done by the pupils, rather than changes in teacher attitudes.

After in-service sessions all teachers significantly increased the time spent using the chalkboard while instructing pupils. The greatest increase was by Teacher I and the least by Teacher IV, indicating that teacher attitude may have been an important variable.

From this data it can be inferred that in-service sessions did encourage the teachers to use the chalkboard more often while instructing their pupils.

Figure II illustrates the amount of time the individual teacher spent using the tape recorder during the 960 minutes of observation.

Compared to the pre-inservice observation, during the post in-service observation, there was a decrease of time spent in the use of the tape recorder in auto instruction in four of the classes; in two classes the tape recorder was used neither before nor after the in-service sessions.

Although there was this decrease of time spent in the use of the tape recorder during auto instruction, there was a significant increase of time that the individual teachers used it while teaching during the post observation period.
Figure 2.—Minutes of Tape Recorder Use

Pre in-service auto instruction
Post in-service auto instruction
Pre in-service teacher instruction
Post in-service teacher instruction
Figure III indicates the time that was spent using the overhead projector in the six classrooms during the pre and post in-service observation.

Although there was a slight increase of time spent in using the overhead projector during the post in-service observation periods the change was not significant.

It is evident that the teachers use other sources and techniques of teaching rather than the overhead projector and in-service sessions did not change their instructional patterns.

![Graph](image-url)

Figure 3.—Minutes of Overhead Projector Use

Pre in-service auto instruction
Post in-service auto instruction
Pre in-service teacher instruction
Post in-service teacher instruction
Figure IV shows an over-all view of the use of the chalkboard, tape recorder and overhead projector in the six observed classrooms.

The minutes in all cases was increased during the post in-service observations with the exception of the post auto use of the tape recorder and overhead projector but the change was not large excepting in the instructional use of the chalkboard.

The teachers used the chalkboard and tape recorder more during their teaching than the pupils did in auto instruction both during the pre and post in-service observation with the exception of the auto instructional use of the tape recorder.

In comparing time and methods in regard to the overhead, the results of the in-service sessions proved to be minimal.

Figure 4.--Percentage of Observation Time that A-V Equipment Was Used by Teachers and Pupils

Pre in-service use of audio-visual aids

Post in-service use of audio-visual aids
Figure 5.--Frequency of Questions Asked by Teachers According to Bloom-Sanders Taxonomy During Pre and Post Sessions

Pre in-service teachers' questions according to Bloom-Sanders that were asked during non-audio teaching

Post in-service teachers' questions according to Bloom-Sanders that were asked during non-audio teaching

Pre in-service teachers' questions according to Bloom-Sanders that were asked during audio teaching

Post in-service teachers' questions according to Bloom-Sanders that were asked during audio teaching
Figure V illustrates a marked increase in the frequency of questions of four of the six teachers during the post in-service observation during the time that teaching was being presented by way of non-audio techniques. The decrease of the two other teachers was minimal.

According to Figure V it is also evident that there was a significant increase by all teachers in the frequency of questions during the post audio teaching.

Four teachers out of six increased the frequency of questions more during non-audio teaching than during audio teaching. One teacher did the same during both types of teaching and one asked more questions during the audio teaching than during the non-audio teaching.

Figure V suggests that the teachers asked more questions after the in-service sessions than they did before.

During the post in-service observation there was an increase in the frequency of questions responded to during the time the teachers did not use the audio-visual aids and also during the time of the use of audio-visual aids. Since the frequency of responses was increased during both the time that the audio and non-audio visual aids were used it could indicate that it was the result of the teacher's teaching style, not merely because of the in-service stimulation to use audio-visual aids.

Four out of six classrooms had less student response to questions during the pre in-service observation during which they were teaching using audio-visual aids but there
were also four out of six classrooms that decreased their response frequency during the post observation audio-visual. Again, this could be the result of the teacher's teaching style.

Figure 6.--Frequency of Student Responses to Teacher Questions During Observation Periods

Student responses to questions at which time the audio-visual aids were not used (pre in-service)--

Student responses to questions at which time the audio-visual aids were used (pre in-service)—

Student responses to questions at which time the audio-visual aids were not used (post in-service)---

Student responses to questions at which time the audio-visual aids were used (post in-service)——
Teacher One made a significant change in the use of the chalkboard during the post in-service observation. This change was only while teaching. Teacher One also increased, but only slightly, the use of the overhead projector. Beyond this, Teacher One made no change in the use of A-V materials after in-service programs.

It can therefore be concluded that Teacher One attained her/his goals of teaching mainly through the use of the chalkboard and that in-service programs did not influence him/her enough to change her/his behavior.
Teacher Two increased the time he/she used the chalkboard during the post in-service observation during the time that he/she was teaching, but at the same time, decreased during auto instruction by the pupils.

Teacher Two slightly decreased in using the tape recorder during the post observation, although there was more time spent using A-V materials during instructional periods than in auto instruction.

There was no change in the use of the overhead projector.

Figure 8.--Use of Audio-Visual Aids by Teacher Two During Pre and Post In-Service Observation
Teacher Three significantly increased his/her use of A-V material during the post session observations. This increase was in both chalkboard and tape recorder instructional sessions and in the chalkboard auto instruction.

Teacher Three increased the use of A-V material during the time of instructional teaching while using the chalkboard during the time of pre in-service observation.

Figure IX indicates that Teacher Three was stimulated after the in-service session to use the chalkboard and tape recorder more during instructional and partially during auto instruction.
Teacher Four increased the time that he/she spent in using the chalkboard during instructional teaching but it is evident that Teacher Four instructs her/his class in other ways besides using A-V materials. The reasons for this might be due to the age of the classroom children, the children's mental ability or merely because he/she may find it easier or beneficial to teach with a minimal use of A-V material.

There was an increase of minutes spent in using the chalkboard during pre in-service instructional teaching over that of pre in-service auto teaching.
There was a significant increase in Teacher Five's use of the chalkboard during the post instructional teaching whereas there was only a small increase in the amount of minutes the chalkboard was used by pupils during auto instruction.

Figure XI indicates that Teacher Five did use the tape recorder and did increase the amount of time used but the total amount of time that the tape recorder was used was not extraordinary. It can be speculated, therefore, that Teacher Five does not rely greatly on using the tape recorder for teaching.

In-service training did not stimulate Teacher Five to use the overhead projector.
Teacher Six only used A-V material during the time that he/she was doing instructional teaching. During the time that he/she was using the chalkboard there was a significant increase during the post in-service observation, therefore, in-service may have stimulated Teacher Six to use A-V material.

Although Figure XII indicates that this teacher did use A-V material, use was only minimal. The reasons may have been the age level of the students, the ability of the students, or the teacher may have felt more secure in teaching without much A-V material.
Summary

Of the 960 minutes observed in each classroom the investigator recognized that the predominant audio-visual aid was that of the chalkboard. During the post in-service observation, it was used 21% of the time and during the pre in-service observation it was used 10%. During the post in-service observation the teachers used the tape recorder 9% and during the pre in-service it was used 8%. Since the overhead was used only 1% of the observed time it was evident that the teachers in this particular school use other types of visual aids in preference to the overhead projector.
Summary

Restatement of the Problem

The present investigation studied the effectiveness of in-service training in stimulating teachers to increase their use of certain audio-visual instructional materials and to explore differences in teacher behavior (level of pupil questioning) while these materials were being used.

Population

Subjects of the present study were six teachers in a private residential school for exceptional children. Four of the selected faculty had beyond ten years teaching experience; three out of six had previously attended audio-visual courses or workshops.

The classes consisted of children ranging in chronological age from 7-2 to 15-9 and mental ages from 3-3 to 8-9.

Summary of the Procedure

The investigator observed the specified classrooms on three consecutive cycles of three days for three weeks. At the time, the minutes of use of the chalkboard,
tape recorder and overhead projector were tabulated and also the frequency and level of the Bloom-Sanders Taxonomy of Questions used by the teachers. These tabulations were made at ten-minute intervals.

The initial three observation sessions were followed by three in-service programs which explained and described various uses and possibilities of the chalkboard, tape recorder and overhead projector. After these guidelines were established at the in-service sessions the investigator again observed the same classrooms to tabulate whether or not any notable increase of use of the audio-visual media was evident. Tabulations were converted to percentages and graphed to illustrate changes in use of audio-visual materials before and after the in-service sessions. Tabulations were also made to see if there was any difference in the frequency of the teachers' questions during audio and non-audio sessions. The same type of tabulation was made for the frequency of student responses during audio and non-audio sessions.

Summary of Data

The principal findings of this study are:

In-service sessions seemingly slightly stimulated teachers to use the chalkboard. During observations conducted after in-service sessions the teachers increased the use of equipment for auto instruction by 1% and during the post in-service session instruction period the use was
increased by 10%. Stimulation in the use of the chalkboard would possibly have increased for some teachers if a greater amount of chalkboard were available in their classroom.

In-service sessions apparently stimulated teachers to use the tape recorder slightly more than previously. The teachers decreased their use of time spent using the tape recorder by 1% during the post auto period but increased the use of the tape recorder during instructional teaching during the post observation by 2%.

It has previously been stated that the possible reasons for only a slight increase in the use of the tape recorder could be the teacher's fear of mechanical devices or possibly the inconvenience of obtaining prepared tapes and the lack of time to prepare their own.

In-service did not stimulate the teachers to use the overhead projector. It was used only 1% of the observation time. The possible reason for the non-use of the overhead projector could be the lack of the exclusive use of the machine or lack of adequate viewing space (wall or screen).

Although there was an increase to some degree in the use of the three specified audio-visual aids, the increase was not large enough to say that in-service sessions stimulated teachers to use audio-visual aids more than they had previously.
There was a significant increase at the .05 level of confidence in the frequency of questions by the teachers and a significant .01 level of confidence increase in the responses of the students during the post in-service session observations. This increase may have developed because of the stimulation created by the discussions during the in-service. The increase might also be attributed to the stimulation that the teacher/student received by having someone observe their classroom interaction, thus possibly creating an incentive to ask and respond to questions more readily.

**Implications**

Whether the teachers had or had not had any previous workshops or courses did not necessarily affect their use of audio-visual aids. One teacher did not have any previous A-V courses but spent a good percentage of his/her time in the use of audio-visual aids whereas another teacher did have A-V workshops but did not spend much time in teaching with A-V materials.

According to the questionnaire administered to the teachers, they stated that they did learn some new ideas to a certain degree but find it difficult to implement new ideas immediately. Progress and new developments do not spring full grown over-night, but depend upon the sharing of concepts, ideas, and experiences.
Conceivably the data implied that the teachers, although interested in audio-visual materials, would have been more easily influenced to use other types of A-V equipment such as the language master, opaque projector or phonograph for teaching, or possibly they felt that more extensive use of manipulative materials is more valuable.

All but one teacher had a tape recorder in the room, but only one increased its use substantially after in-service. The teachers had possibly reached their optimal level of use of the tape recorder as a result of their initial course work.

It was also possible that other forms of in-service training would have been more beneficial in encouraging teachers to use A-V equipment more often, not only by having the in-service with the teachers but also including demonstrations with children using the A-V equipment and materials, thus convincing the teachers that exceptional children can manipulate and benefit from the use of A-V materials. Possibly a representative from a producing company would have been more stimulating to the teachers.

One in-service session per visual aid was possibly too minimal to make an impact on teacher attitudes, but because of the scarcity of after school hours it was impractical to extend or to have more sessions. Although the investigator offered additional assistance after the in-service sessions, no one sought extra help.
The investigator's main idea was to stimulate the teachers to increase their use of A-V materials, but it is possible that the guidance was not sufficiently stimulating or informative, or possibly the materials explained were not meeting the needs of the teachers.

Of the three specified A-V materials the only machine that had to be obtained outside of the classroom was the overhead projector and this could be procured by merely requesting it, therefore unavailability was hardly a reasonable excuse for not using the overhead projector. Some other reason must be found to account for the reason that the teachers were not stimulated enough to change their teaching behavior.

Personality of the teachers could be another factor influencing the use or non-use of A-V materials. Some people react very favorably to suggestions while others do not. The personality of a teacher would probably have a great effect on whether he/she preferred to use himself/herself (voice, gestures) to convey a message or whether he/she would be willing to use machines for this purpose.

Subject matter being studied at the time of observation could also influence the results of the study. Some topics would readily lend themselves to machine-teaching devices.

Another factor which might have had some effect upon the results of the study was that the investigator was not
a person of authority, but was doing the study as a student and may have been perceived in a low credibility role.

Finally, the time of year in which the observations were performed might have had some influence on the results. The study was done in the fall of the year. It is possible that the children were not sufficiently acclimated to accept an extensive use of A-V teaching, therefore, the teacher was discouraged in using it.

**Teacher Questioning**

In-service sessions did not greatly increase the amount of time that the teachers used A-V materials during the post observation sessions, but there was a marked increase in the frequency of teachers' Level One questioning, both while equipment was in use and while it was not. Level One questions relate to routines, assignments and other "housekeeping" types of concerns. The mean difference between pre- and post-in-service observations in teacher questioning at Level One was 51.50 when equipment was in use; the mean difference was 61.67 when equipment was not in use. This difference is greater than chance and difficult to account for. It would seem reasonable to suspect that the presence in the room of an observer who was recording behavior might stimulate increased verbal behavior on the part of the teacher.
There was but slight mean difference between pre- and post-in-service observations with respect to Level Two questions (rhetorical) and Level Three questions (recall or recognition of information). Differences were increasing as the observation progressed toward termination, but overall differences remained negligible. Use or non-use of A-V equipment apparently had no impact. This might also be concluded regarding the in-service sessions: they did not affect teacher behavior.

Greater increases between pre- and post-inservice sessions were evident in teachers' use of Level Four questions (student must translate information into a different symbolic language) and Level Five questions (student discovers relationships). These pre- to post-in-service mean differences were: Level Four 29.83 using equipment, 53.10 not using equipment; Level Five, 23.33 using equipment, 13.33 not using equipment. Again, this might be due to simple all-over increase in verbal behavior on the part of teachers, or it might reflect increased sensitivity to the higher forms of instruction as a correlate of heightened professional interest following the in-service sessions.

Probably because of the teachers' consideration of the intellectual limitations of the pupils, there was little use of questions at Levels 6-9 whether before or after the sessions. It would be unrealistic to expect to effect change that was beyond the capabilities of the pupils to attain.
In summary, the in-service sessions did appear to modify teachers' questioning behavior to a small extent with respect to questions at Levels One, Four and Five.

**Future Studies**

The findings of the present study have indicated the need for further investigations toward an effective program that will stimulate teachers to use audio-visual aids to a greater extent.

In future studies more teachers should be involved, and the research might include other types of audio-visual aids besides the three specified in this study and that the observation periods be extended.

It is hoped that the present study will encourage further investigation which in turn will hopefully produce a more extensive and effective A-V Program.
BIBLIOGRAPHY
BIBLIOGRAPHY


Flanders, Ned A. "Teaching Behavior and In-Service Programs," Educational Leadership. XXI (October, 1963).


APPENDIX A
APPENDIX A

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OVERHEAD

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TAPE RECORDER

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CHALKBOARD

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Materials used

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APPENDIX B

OUTLINE FOR OVERHEAD PROJECTOR IN-SERVICE MEETING

A. Classrooms
   1. Edified at amount of work done
   2. Given me many ideas
   3. Diversity of abilities of students

B. Teachers
   1. All are dedicated
      a. hours spent
      b. love of children
   2. All are creative
   3. All are interested in learning new ways to motivate and help their students

C. Overhead Projector
   1. Happiness is having your own projector and transparency maker
      a. 5 in the school (3 to be shared)
      b. shared time
      c. thermofax (first floor)
   2. Know how to use them
      a. Overhead procedures
         1.) machine in front of class
         2.) on and off switch
         3.) light may stay on
         4.) when finished don't move until machine is cool
      b. transparencies
         1.) original
            a.) any paper that has writing, printing, or drawing
            b.) infrared system is blind to color
            c.) original must be in a carbon base or compatible media
         2.) infrared transparency maker
            a.) reproduces such media as:
               1. India Ink
               2. newsprint
               3. number 2 lead pencil
               4. charcoal
               5. black printer's ink used in magazines and textbooks
               6. black typewriter ribbon
               7. just about anything black

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3. Sources
   a. printed transparency originals (3M) (listing in the library)
   b. Textbooks publishers include availability of originals with text
   c. many periodicals include special sections of transparency originals (Newsweek, Focus, Scholastic)
   d. handmade
      1) you are still your creative self
         a) want and need visuals tailored specifically for a specific lesson
         b) you need not be an artist to create your own effective visuals

4. Suggestions for making transparencies
   a. preparation of lay-out
   b. use transparency no. 1

5. Setting objectives in presenting instructional media
   a. listing of objectives
   b. use transparency no. 2

6. Discuss my transparencies
   a. how made
      1) printer's black ink (transparency no. 3)
      2) pencil (transparency no. 4)
      3) 3M original (transparency no. 5)
      4) fine permanent brush pen (transparency no. 6)
      5) pictures from magazines (transparency no. 7)
      6) stick acetate (color) (transparency no. 8)
      7) infrared workbooks (transparency no. 9)
   b. ways they can be used
      1) instructional
         a) math
            1. flannel (add-subtract)
            2. box frame (inside-outside)
            3. thermometer
            4. clock
            5. ideas ???
         b) phonics
            1. flannel (consonants)
            2. prepared
         c) writing
            1. formation of letters
            2. flannel - recognition of letters
APPENDIX C

OUTLINE FOR TAPE RECORDER IN-SERVICE MEETING

A. Fantastic things done since last week
   1. Ideas
   2. Attempts
   3. Questions

B. Spoke of challenges of teachers
   1. Rapidly emerging changes
   2. Various abilities
   3. Teacher in two places at one time
   4. Individualization of instruction
   5. Limited resource material

C. How the tape recorder helps you
   1. Helps you individualize instruction
      a. helps you teach special students without holding back the rest of the class
      b. all have benefit of your personalized attention on tape
   2. Helps you save time in ——
      a. providing necessary repetition in such areas as drill in various subjects
      b. basic lessons can be recorded—those who need it may refer back to it for further clarification
      c. on tape your voice remains calm, does not lose patience
      d. if you tape a lesson you can move about the room to check on individual students and diagnose individual learning problems
   3. Helps support a substitute teacher
      a. when you know you will miss a class the tape recorder gives you the opportunity to maintain instructional continuity with the class in your own voice
      b. it saves you and the substitute the time explaining the lesson to her
   4. Helps keep your lessons personal
      a. you can gear each lesson especially for a particular student or students
      b. your voice is a familiar one and the student is more comfortable listening to you, understands your methods and teaching style
5. Helps broaden your lesson content
   a. permits you to record material that may not be available to your students during class hours (radio, TV, additional subject information not found in textbooks).
   b. various musical and literature segments (some selected tapes may be spliced onto a single tape and played back as a carefully designed sequence without the bothersome chore of changing tapes or hunting through phonograph records).

6. Helps increase your classroom teaching hours
   a. gives you more free time by allowing your voice to be in two or three places at one time
   b. tapes can be prepared to suit the needs of one, two, twenty or ? students

7. Helps you become aware of your own voice
   a. you can objectively evaluate your own teaching techniques

D. How the recorder helps the student
1. Helps him the opportunity to work at his own pace
2. Helps him receive your individual attention
   a. on tape you can provide the extra help and learning guidance that often only you can effectively give
   b. enables the student to work on his own special problems himself, and you are free to manage the rest of the class
3. Helps him to concentrate better
4. Helps him learn and benefit from self-evaluation

E. Tips on writing and recording tapes
1. Decide and define exactly what you want to accomplish
   a. the temptation to include just one more concept than originally planned must often be resisted
   b. make your goal realistic
2. Work from a written report
   a. too many other factors to keep in mind in recording
   b. occasionally you may ad lib, once the major content has been established
   c. aim for a 10-15 minute maximum tape
3. Develop an accompanying worksheet
4. Rehearse, experiment yourself
5. Each child's name should be on each tape
F. Suggestions for use in the classroom
   1. Spelling
      a. classroom situation
      b. some not there - able to go through lesson
         when re-arrived
      c. story - (Bobby read a story - another child
         can read it with the book)
      d. silent film - remarks of those in class
   2. Math
      a. drills

G. One way of increasing listening skills
   1. Music
   2. Spelling
   3. Phonics
   4. Story

H. Language Master
APPENDIX D

OUTLINE FOR CHALKBOARD IN-SERVICE MEETING

A. Hope last two in-service gave
   1. Aid
   2. Incentive to use A-V in various capacities

B. Last but not least--Chalkboard
   1. So much a part of classrooms--it has become synonymous with education itself
      a. one of the oldest visual techniques with unlimited opportunities for effective teaching
      b. can be utilized by any teacher or leader and used with all age groups
      c. charts, sketches, graphs, maps, memory verses, songs, outlines and announcements can be drawn or printed to focus attention and to clarify ideas
   2. Uses are familiar to us but should not take too much for granted as to the uses
      a. effective use, even for simplest of learning experiences, requires thoughtful consideration and creativity
      b. teacher should lead way by using chalkboard but should do so in such ways that his student be encouraged to do likewise
   3. Techniques for best results
      a. lettering should be large enough to be seen by the students in the last row
      b. only one point at a time should be made, the chalkboard should be used to unfold the material step by step
      c. all information which is not being used should be erased
      d. the teacher should stand to one side and use a pointer to direct attention to the items being considered
      e. at times amounts of written work on chalkboard before class session begins
      f. use simple drawings such as stick figures to illustrate
      g. make use of the suspense method
         1.) a series of drawings or written ideas can be placed on the chalkboard and then covered with a long sheet or roll of paper
2.) one drawing at a time can be revealed
h. also useful for recording something that is on-going or something that may change quickly during the course of discussion
i. project-on-is ideal for presenting needed visualizations to the class. Newspaper and magazine pictures and diagrams can be re-created on the chalkboard by placing them on an opaque
j. pattern method--punch or pounce system, teacher holds pattern against the chalkboard, and rubs a dusty eraser firmly across - (alphabet)
k. template method--device for drawing of diagrams, symbols and designs, which must be accurate
l. comic approach
m. grid method--original is blocked off into squares

4. Basically, chalkboard teaching techniques are good or ineffectual in terms whether the use of the chalkboard contributes to higher levels of understanding, interest, and subject matter accomplishment

5. Ideas
a. all use but to a different degree
b. particular area you find most valuable

C. Follow-up of use of A-V materials
1. Each experience that a person has changes him in some way
2. The degree to which an experience with an A-V device changes one is dependent largely on how well it serves its purpose and how skillfully it is used by the teacher and by the learner
APPENDIX E

QUESTIONNAIRE GIVEN AFTER OBSERVATIONS WERE COMPLETED

1. Years of teaching experience? Special Education  

2. Years of teaching experience? Normal education.  

3. Any previous audio-visual course?__________

4. Attended any audio-visual workshop.__________

5. Would use A-V equipment if not afraid of mechanical difficulties.__________

6. Would use A-V equipment more if I had exclusive use of A-V equipment. YES__________ NO _________

7. Which do you feel most useful?  
   Overhead_______ Tape recorder_______ Chalkboard_______

8. Would use A-V equipment if I had more room.  
   YES__________ NO _________

9. I feel that the in-service sessions were sufficient.  
   YES__________ NO _________

10. I have learned new ideas, outlooks, methods, and attitudes from the in-service meetings.  
    VERY MUCH__________ SOMewhat_______ NONE__________

11. I believe that these in-service meetings do not directly influence classroom practices.  
    VERY MUCH__________ SOMewhat_______ NONE__________

12. I feel that these series of meetings reviewed known material but did not stimulate new thinking on my part.  
    VERY MUCH__________ SOMewhat_______ NONE__________
13. I feel that these in-service meetings have influenced my classroom teaching.
   VERY MUCH    SOMewhat      NONE

14. I feel that the in-service meetings have made me more confident in using A-V equipment.
   VERY MUCH    SOMEWHAT      NONE

15. Please add your impressions, suggestions and advice concerning the in-service meetings.